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### Peptide and protein drug delivery to and into tumors: challenges and solutions.

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The potential of peptide and protein anticancer agents has yet to be realized owing to the many unresolved problems concerning their delivery to the site of a tumor and into tumor cells. However, our understanding of the mechanisms underlying the biological fate and biodistribution of protein and peptide drugs has advanced to the stage where methods that use or influence these mechanisms are now available. There are different approaches that can improve the stability, longevity and targeting of peptides and proteins in the body, such as their modification with various soluble polymers, incorporation into microparticulate drug carriers, enhanced permeability and retention effect-based tumor targeting and the use of targeting moieties. Furthermore, new approaches to intracellular drug delivery, including the use of transduction proteins and peptides, are being developed. These advances promise the delivery of a new generation of anticancer drugs.

PMID: 12623240 [PubMed - indexed for MEDLINE]

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